

What is claimed is:

1. A method for producing a transgenic, non-human animal overexpressing PDGF-C or an analog thereof, or a functional fragment of PDGF-C or an analog thereof, the method comprising the steps of:

a) introducing a transgenic DNA into a cell of a non-human animal, said transgenic DNA comprising a polynucleotide sequence encoding for PDGF-C or an analog thereof, or a functional fragment of PDGF-C or an analog thereof;

b) allowing said transgenic DNA to integrate into said cell;

c) introducing said cell from step b) into a non-human animal; and

d) allowing said cell from step c) to develop into a transgenic, non-human animal.

2. The method of claim 1, wherein said cell of step a) is the pronuclei of a fertilized oocyte and said introducing of step c) is implanting said fertilized oocyte into a pseudopregnant non-human animal.

3. The method of claim 1, wherein said cell of step a) is an embryonic stem cell; said integrating of step b) is integrating said DNA into the genomic DNA of said embryonic stem cell; and said introducing of step c) is introducing said embryonic stem cell into a developing embryo.

4. The method of claim 1, wherein said transgenic DNA is operably linked to a promoter.

5. The method of claim 4, wherein said promoter is selected from group consisting of: alpha-myosin heavy chain promoter, keratin K14 promoter, and insulin promoter.

6. The method of claim 1, wherein said transgenic DNA is operably linked to an epitope-tag.

7. The method of claim 6, wherein said epitope tag is c-myc.

8. The method of claim 1, wherein said transgenic DNA is operably linked to a marker sequence.

9. A transgenic, non-human animal produced by the method of claim 1.

10. An animal according to claim 9, wherein said animal is a rodent.

11. An animal according to claim 10, wherein said animal is a mouse.

12. A transgenic, non-human animal that is a descendant from an animal according to claim 9.

13. A transgenic, non-human animal that is a descendant from an animal according to claim 10.

14. A transgenic, non-human animal that is a descendant from an animal according to claim 11.

15. A cell isolated from an animal according to claim 9.

16. A cell isolated from an animal according to claim 10.

17. A cell isolated from an animal according to claim 11.

18. A fertilized oocyte containing transgenic DNA that encodes for PDGF-C or an analog thereof, or a functional fragment of PDGF-C or analog thereof.

19. An embryonic stem cell containing transgenic DNA that encodes for PDGF-C or an analog thereof, or a functional fragment or analog thereof.

20. A method for identifying a compound as a PDGF-C antagonist, said method comprising the steps of:

introducing said compound into a transgenic, non-human animal overexpressing PDGF-C or an analog thereof, or a functional fragment of PDGF-C or an analog thereof;

monitoring the biological activity of PDGF-C in said animal; and

identifying said compound as a PDGF-C antagonist where PDGF-C biological activity is inhibited.

21. The method of claim 20 wherein said monitoring step comprises comparing said transgenic, non-human animal with a wild-type non-human animal of the same species.

22. A method for identifying a compound as a PDGF-C antagonist, said method comprising the steps of:

introducing said compound into a cell isolated from a transgenic, non-human animal overexpressing PDGF-C or an analog thereof, or a functional fragment of PDGF-C or an analog thereof;

assaying the effect of said compound on said cell; and

identifying said compound as a PDGF-C antagonist where the PDGF-C biological activity of said cell is altered.

23. A method of screening a compound for inhibition of hypertrophy, comprising the steps of:

administering a pharmaceutically active amount of said compound to a transgenic, non-human animal overexpressing PDGF-C or an analog thereof, or a functional fragment of PDGF-C or an analog thereof; and

monitoring the cardiac development of said animal;

determining said compound inhibits hypertrophy where said cardiac development is normal.

24. A method of screening a compound for inhibition of fibrosis, comprising the steps of:

administering a pharmaceutically active amount of said compound to a transgenic, non-human animal overexpressing PDGF-C or an analog thereof, or a functional fragment of PDGF-C or an analog thereof; and

monitoring the cardiac development of said animal;

determining said compound inhibits fibrosis where said cardiac development is normal.